NASS
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Nebraska Biotechnology Varieties Chemical Usage

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Biotechnology Varieties

The National Agricultural Statistics Service conducts the March Agricultural Survey in all States each year. Randomly selected farmers across the United States are asked what they intend to plant during the upcoming growing season. Questions include whether or not farmers intend to plant corn or soybeans that, through biotechnology, is resistant to herbicides, insects, or both.

The States published individually in the following tables represent 82 percent of all corn planted acres and 89 percent of all soybean planted acres. Conventionally bred herbicide resistant varieties were excluded. Insect resistant varieties include only those containing *bacillus thuringiensis* (Bt). Stacked gene varieties include those containing biotech traits for both herbicide and insect resistance.

Corn for Grain: Biotechnology Varieties by State and United States, Percent of All Corn Planted, 2003-2004

State	Insect Resistant (Bt)		Herbicide Resistant		Stacked Gene Varieties		All Biotech Varieties	
	2003	2004	2003	2004	2003	2004	2003	2004
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Illinois	23	28	4	5	1	2	28	35
Indiana	8	10	7	8	1	1	16	19
Iowa	33	37	8	11	4	5	45	53
Kansas	25	30	17	18	5	5	47	53
Michigan	18	16	14	16	3	3	35	35
Minnesota	31	30	15	19	7	8	53	57
Missouri	32	32	9	11	1	4	42	47
Nebraska	36	41	11	15	5	8	52	64
Ohio	6	10	3	5	*	1	9	16
South Dakota	34	32	24	28	17	20	75	80
Wisconsin	21	24	9	13	2	2	32	39
Other States [1]	17	20	17	18	2	4	36	42
US	25	27	11	14	4	5	40	46

* Data rounds to less than 0.5 percent. [1] Other States includes all other States in the corn estimating program.
Source: USDA NASS Prospective Plantings, March 31, 2004

Soybeans: Biotechnology Varieties by State and United States, Percent of All Soybeans Planted, 2003-2004

State	Herbicide Resistant Only		All Biotech Varieties	
	2003	2004	2003	2004
	Percent	*Percent*	*Percent*	*Percent*
Arkansas	84	92	84	92
Illinois	77	82	77	82
Indiana	88	88	88	88
Iowa	84	89	84	89
Kansas	87	91	87	91
Michigan	73	75	73	75
Minnesota	79	83	79	83
Mississippi	89	94	89	94
Missouri	83	88	83	88
Nebraska	86	89	86	89
North Dakota	74	81	74	81
Ohio	74	77	74	77
South Dakota	91	96	91	96
Wisconsin	84	85	84	85
Other States [1]	76	82	76	82
US	81	86	81	86

[1] Other States includes all other States in the soybean estimating program.
Source: USDA NASS Prospective Plantings, March 31, 2004

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2003 Agricultural Chemical Usage

The agricultural chemical use estimates in this report refer to on-farm use of commercial fertilizers and pesticides on targeted crops for the 2003 crop year. Farm and ranch operators were enumerated late in the growing season or after the farm operator had indicated that planned applications were completed. The data were compiled from the Agricultural Resources Management Study (ARMS) and the Objective Yield Survey, conducted by USDA's National Agricultural Statistics Service.

Corn

Nitrogen was applied to 96 percent of the 2003 corn acreage in 18 selected States. Corn growers used an average of 1.7 applications per acre while applying 78 pounds of nitrogen per treatment. In the selected States, 79 percent of the planted corn acreage received phosphates, while potash was applied to 64 percent of the planted acreage.

Herbicides were applied to 95 percent of the corn acreage in 2003. Atrazine continued to be the most widely applied herbicide with 68 percent of the planted acreage being treated. It was applied at the rate of 1.04 pounds per acre.

In 2003, 29 percent of the corn acreage was treated with insecticides. Cyfluthrin and Tebupirimphos were the most widely applied insecticides, with 7 percent of the planted corn acreage treated in the 18 selected States.

In Nebraska, nitrogen was applied to 95 percent of the acreage, phosphates to 76 percent and potash to 25 percent. Herbicides were applied to 93 percent of the corn acreage while insecticide application covered 36 percent.

Corn: Acreage, Fertilizer and Pesticide Applications, Selected States, 2003

State	Planted Acreage	Nitrogen			Phosphate			Potash			Herbicide	Insecticide
		Area Applied	Appli-cations	Rate Per Application	Area Applied	Appli-cations	Rate Per Application	Area Applied	Appli-cations	Rate Per Application	Area Applied	Area Applied
	1,000 Acres	*Percent*	*Number*	*Pounds/acre*	*Percent*	*Number*	*Pounds/acre*	*Percent*	*Number*	*Pounds/acre*	*Percent*	*Percent*
Iowa	12,400	93	1.4	94	59	1.0	61	65	1.0	80	96	14
Nebraska	8,100	95	1.9	67	76	1.0	35	25	1.0	19	93	36
Total [1]	72,770	96	1.7	78	79	1.1	53	64	1.0	78	95	29

[1] States included: CO, IL, IN, IA, KS, KY, MI, MN, MO, NE, NY, NC, ND, OH, PA, SD, TX, WI.

Corn: Agricultural Chemical Applications, Nebraska, 2002-2003[1]

Agricultural Chemical	Area Applied		Applications		Rate per Application		Rate per Crop Year		Total Applied	
	2002	2003	2002	2003	2002	2003	2002	2003	2002	2003
Herbicides:	*Percent*	*Percent*	*Number*	*Number*	*Pounds/acre*	*Pounds/acre*	*Pounds/acre*	*Pounds/acre*	*1,000 Lbs.*	*1,000 Lbs.*
2,4-D	4	7	1.0	1.0	0.51	0.39	0.51	0.39	150	229
Acetamide	4	7	1.0	1.0	0.31	0.32	0.31	0.32	102	187
Acetochlor	23	25	1.0	1.0	1.54	1.67	1.57	1.67	2,985	3,323
Alachlor	2	4	1.0	1.0	1.95	1.19	1.95	1.19	408	403
Atrazine	64	72	1.0	1.0	0.91	0.96	0.99	1.02	5,356	5,985
Clopyralid	9	6	1.0	1.0	0.09	0.09	0.09	0.09	63	43
Dicamba	5	4	1.0	1.0	0.32	0.20	0.32	0.20	129	70
Dicamba, Dimet. salt	3	3	1.0	1.0	0.11	0.13	0.11	0.13	29	30
Diflufenzopyr-sodium	3	2	1.0	1.0	0.05	0.05	0.05	0.05	12	9
Dimethenamid	6	3	1.0	1.0	0.76	0.53	0.76	0.53	362	122
Dimethenamid-P		2		1.0		0.58		0.58		114
Flumetsulam	9	6	1.0	1.0	0.03	0.03	0.03	0.03	23	15
Glyphosate	8	18	1.0	1.2	0.67	0.70	0.73	0.85	503	1,261
Imazapyr		2		1.0		0.002		0.002		[2]
Imazethapyr		2		1.0		0.007		0.007		1
Isoxaflutole	11	14	1.0	1.0	0.05	0.05	0.05	0.05	46	56
Mesotrione	7	13	1.0	1.0	0.08	0.12	0.08	0.12	49	121
Metolachlor	9	7	1.0	1.0	1.16	1.31	1.22	1.31	935	780
Nicosulfuron	8	4	1.0	1.0	0.02	0.02	0.02	0.02	14	6
Primisulfuron	7	7	1.0	1.0	0.02	0.02	0.02	0.02	13	13
Prosulfuron	7	7	1.0	1.0	0.01	0.008	0.01	0.008	6	4
Rimsulfuron	8	5	1.0	1.0	0.01	0.01	0.01	0.01	8	4
S-Metolachlor	20	23	1.0	1.0	0.88	1.15	0.88	1.15	1,466	2,129
Insecticides:										
Bifenthrin	3	5	1.0	1.0	0.05	0.04	0.05	0.04	14	16
Cyfluthrin	6	4	1.0	1.0	0.005	0.009	0.005	0.009	3	3
Fipronil	7	5	1.0	1.0	0.09	0.12	0.09	0.12	53	49
Permethrin	3	4	1.1	1.1	0.10	0.07	0.11	0.08	25	30
Tebupirimphos	6	4	1.0	1.0	0.11	0.12	0.11	0.12	52	37
Tefluthrin	9	10	1.0	1.0	0.10	0.10	0.10	0.10	76	76
Terbufos	3	3	1.0	1.0	1.01	1.01	1.01	1.05	223	246

[1] Planted acres in 2003 for Nebraska were 8.1 million acres. [2] Total applied is less than 500 lbs.

Sorghum

Nitrogen was applied to 82 percent of the 2003 sorghum acreage in 7 selected states. Sorghum growers used an average of 1.3 applications per acre while applying 61 pounds of nitrogen per treatment. In the selected States, 49 percent of the planted corn acreage received phosphates, while potash was applied to 9 percent of the planted acreage.

Herbicides were applied to 85 percent of the sorghum acreage in 2003. Atrazine was the most widely applied herbicide with 70 percent of the planted acreage being treated. It was applied at the rate of 1.04 pounds per acre.

In 2003, 8 percent of the sorghum planted acreage was treated with insecticides in the Program States. Terbufos was the most widely applied insecticide, which was applied to 4 percent of the acres planted to sorghum in the States surveyed.

In Nebraska, nitrogen was applied to 99 percent of the sorghum acreage, phosphates to 40 percent, and potash to 1 percent. Herbicides were applied to 98 percent of the sorghum acreage while insecticide application covered 4 percent.

Sorghum: Acreage, Fertilizer and Pesticide Applications, Selected States, 2003

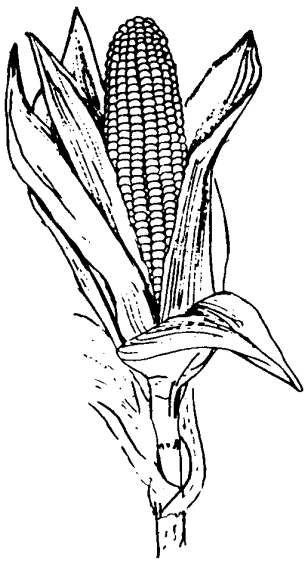
State	Planted Acreage	Nitrogen			Phosphate			Potash			Herbicide	Insecticide
		Area Applied	Appli-cations	Rate Per Application	Area Applied	Appli-cations	Rate Per Application	Area Applied	Appli-cations	Rate Per Application	Area Applied	Area Applied
	1,000 Acres	*Percent*	*Number*	*Pounds/acre*	*Percent*	*Number*	*Pounds/acre*	*Percent*	*Number*	*Pounds/acre*	*Percent*	*Percent*
Colorado	270	61	1.4	33	39	1.0	51	0	1.0	2	52	0
Kansas	3,550	97	1.3	55	55	1.0	28	4	1.0	35	90	0
Missouri	215	100	1.2	92	75	1.0	55	72	1.0	69	98	6
Nebraska	660	99	1.4	61	40	1.0	23	1	1.0	9	98	4
Oklahoma	300	69	1.4	52	36	1.1	29	11	1.0	21	84	0
South Dakota	270	84	1.3	42	54	1.0	30	3	1.0	10	87	0
Texas	3,200	63	1.1	75	43	1.0	33	14	1.0	12	78	20
Total[1]	8,465	82	1.3	61	49	1.0	31	9	1.0	27	85	8

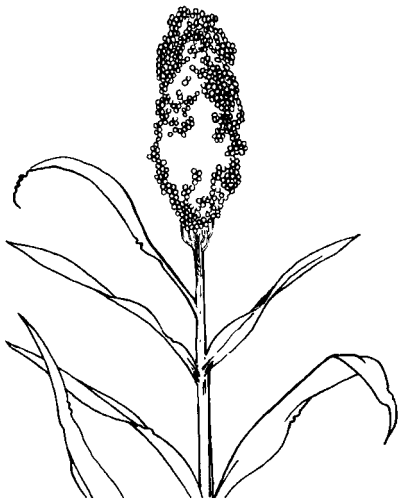
[1] States included: CO, KS, MO, NE, OK, SD, TX.

Sorghum: Agricultural Chemical Applications, Nebraska, 2003

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Year	Total Applied
	2003	2003	2003	2003	2003
Herbicides:	*Percent*	*Number*	*Pounds/acre*	*Pounds/acre*	*1,000 Lbs.*
2, 4-D	30	1.0	0.40	0.42	83
Acetic acid	2	1.0	0.12	0.12	2
Alachlor	16	1.0	1.52	1.54	165
Atrazine	96	1.1	1.28	1.43	907
Bromoxynil	5	1.0	0.24	0.24	8
Carfentrazone-ethyl	1	1.3	0.007	0.009	[1]
Dicamba	9	1.0	0.39	0.39	24
Dimethenamid	17	1.1	1.05	1.16	133
Glyphosate	27	1.5	0.71	1.07	189
Glyphosate diam salt	1	1.0	0.66	0.66	5
Halosulfuron	7	1.0	0.03	0.03	1
Metolachlor	4	1.0	1.43	1.43	41
Paraquat	2	1.0	0.94	0.94	12
S-Metolachlor	53	1.0	1.22	1.27	441
Insecticides					
Chlorpyrifos	3	1.0	1.23	1.24	27

[1] Total applied is less than 500 lbs.





Pesticides: Common Names and Trade Names

Herbicides

Common Name	Trade Name	Common Name	Trade Name
2,4-D	Agsco, Amine, Barrage, Class, DMA, Dacamine, Defy, Envy, Formula, Hi-Dep, Riverside, Salvo, Savage, Tiller, Weedmaster, Weedone	Glyphosate	Bronco, Buccaneer, Clear-Out, Cornerstone, Credit, Engame, Expert, Fallow Master, Field Master, Gly Star, Glyfos, Glymix,
Acetamide	Axiom, Define, Epic		Glyphomax, Glyphosate, Honcho,
Acetochlor	Degree Xtra, DoublePlay, Field Master, Fultime, Harness, Keystone Surpass, TopNotch, Volley		Landmaster, Mirage, RT Master, Rattler, Ready Master, Roundup
		Glyphosate diam. salt	Touchdown
Alachlor	Arena, Bronco, Bullet, Lariat, Lasso, Micro-Tech, Partner, Saddle	Imazapyr	Lightning
		Imazethapyr	Lightning
Atrazine	AAtrex, Banvil-K + Atrazine, Basis Gold, Bicep, Buctril + Atrazine, Bullet, Cinch, Degree, Extrazine, Field Master, Fultime, Guardsman, Harness, Laddok, Lariat, Lasso LeadOff, Liberty, Marksman Moxy + Atrazine, Ready Master, Shotgun, Simazat, Steadfast, Volley	Isoxaflutole	Balance, Epic
		Mesotrione	Callisto, Camix, Lumax
		Metolachlor	Bicep, Dual, Turbo
		Metribuzin	Axiom, Lexone, Sencor, Turbo
		Metsulfuron-methyl	Ally, Finesse, Valuron
		Nicosulfuron	Accent, Basis, Celebrity, DPX-79406, Steadfast
		Norflurazon	Zorial
Bromoxynil	Brominal, Bromox/MCPA, Bronate, Buctril, Moxy + Atrazine, Rhino	Paraquat	Cyclone, Gramoxone, Starfire
		Pendimethalin	Pendimax, Prowl
Carfentrazone-ethyl	Aim, Priority, Shark	Primisulfuron	Beacon, Exceed, NorthStar, Spirit
Clethodim	Prism, Select	Prosulfuron	Exceed, Peak, Spirit
Clomazone	Command	Rimsulfuron	Accent, Basis, DPX-79406, Matrix, Steadfast
Clopyralid	Accent, Curtail, Hornet, Stinger		
Dicamba, Dimethlamine salt	Distinct, Sterling	S-Metolachlor	Bicep, Camix, Cinch, Dual, Expert, Lumax
Dicamba, Pot. Salt	Banvel-K + Atrazine, Marksman		
Dicamba, Sodium Salt	Celebrity, Dicamba, Yukon	Simazine	Princep, Sim-Trol, Simazat, Simazine
Difenzoquat	Avenge		
Diflufenzopyr-sodium	Celebrity Plus, Distinct	Sulfosate	Touchdown
Dimethenamid	Frontier, Guardsman, Leadoff	Trifluralin	Buckle, Treflan, Tri-4, Trific, Trifluralin, Trilin, Trust
Flumetsulam	Accent Gold, Bicep, Hornet, Python		

Insecticides

Common Name	Trade Name	Common Name	Trade Name
Bifenthrin	Capture, Double Threat	Permethrin	Ambush, Eight, Perm-up, Permectrin, Permethrin, Pounce
Chlorpyrifos	Chlorpyrifos, Lock-on, Lorsban		
Cyfluthrin	Aztec, Baythroid, Leverage	Tebupirimphos	Aztec
Dimethoate	Cygon, Digon, Dimate, Dimethoate	Tefluthrin	Force
Fipronil	Regent	Terbufos	Counter

Agricultural chemical use and pest management practices data contained in this publication are a summary of data published in USDA NASS *Agricultural Chemical Usage - Field Crops* found on the internet at http://www.usda.gov/nass/ dated May 20, 2004.